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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,540	01/15/2004	Dong-kee Sohn	249/441	3055
27849	7590	10/24/2007		
LEE & MORSE, P.C. 3141 FAIRVIEW PARK DRIVE SUITE 500 FALLS CHURCH, VA 22042			EXAMINER DO, AN H	
			ART UNIT 2853	PAPER NUMBER
			MAIL DATE 10/24/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/757,540

Applicant(s)

SOHN ET AL.

Examiner

An H. Do

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14, 19-21, 26 and 27 is/are allowed.
- 6) ☒ Claim(s) 15-18 and 22-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

The Amendment filed on 23 July 2007 has been acknowledged.

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 15-18 and 22-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Yaron (US 7,025,442).

Yaron discloses the following claimed features:

Regarding claim 15, a method of expelling ink, comprising: filling an ink chamber (20) with ink; irradiating (130) a laser beam (column 8, lines 62-67) directly onto the ink (30) contained in the ink chamber (20) to generate a pressurized wave in the ink and vibrating a surface of the ink using the pressurized wave; and expelling an ink droplet (Figure 15C, element 184) from the surface of the ink (30) by the vibration of the surface of the ink.

Regarding claim 16, further comprising: converging the laser beam (502) using a condenser lens (516, 518) before irradiating the laser beam onto the ink.

Regarding claim 17, wherein the laser beam (502) has a sufficiently high energy and is irradiated onto the ink for a sufficiently short period of time to prevent boiling the ink.

Regarding claim 18, wherein the ink chamber (20) is a plurality of ink chambers (even though only one chamber is shown) and irradiating (130) the laser beam (column 8, lines 62-67) onto the ink comprises: selectively irradiating (130) the laser beam onto ink contained in one or more of the plurality of ink chambers (Figure 10).

Regarding claim 22, wherein irradiating the laser beam directly onto the ink includes irradiating the laser beam through a passageway plate (132) that forms a wall of the ink chamber.

Regarding claim 23, wherein: the passageway plate is silicon, is in contact with the ink, and is disposed between ink in the ink chamber (20) and the laser beam, irradiating the laser beam directly onto the ink includes irradiating the laser beam through the silicon passageway plate (132), and the silicon passageway plate is transparent to the laser beam (Figure 6B, column 12, line 62 to column 13, line 30).

Regarding claim 24, wherein the laser beam has a wavelength in the infrared region (column 13, lines 8-36).

Regarding claim 25, wherein the ink (30) in the ink chamber (20) transforms the laser beam into the pressurized wave (column 24, lines 27-37).

***Allowable Subject Matter***

3. Claims 1-14, 19-21, 26 and 27 are allowed over prior arts as discussed in Applicant's Remarks filed on 23 July 2007.

***Response to Arguments***

4. Applicant's arguments with respect to claims 15-18 have been considered but are moot in view of the new ground(s) of rejection.

***Contact Information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to An H. Do whose telephone number is 571-272-2143. The examiner can normally be reached on Monday-Friday (Flexible).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AD  
October 14, 2007

/An H. Do/  
Primary Examiner  
Art Unit 2853